1. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{-1386}{14}}$$

A. Not a Real number

B. Integer

C. Irrational

D. Whole

E. Rational

---

2. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 15 \div 2 * 20 - (9 * 18)$$

A. $[-164.38, -155.38]$

B. $[158.62, 165.62]$

C. $[-2846, -2839]$

D. $[-311, -310]$

E. None of the above

---

3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(2 - 7i)(-6 - 8i)$$

A. $a \in [43, 50]$ and $b \in [57.1, 59.8]$

B. $a \in [-13, -10]$ and $b \in [55.7, 56.3]$

C. $a \in [-75, -67]$ and $b \in [-27, -24]$

D. $a \in [-75, -67]$ and $b \in [24.2, 26.9]$

E. $a \in [43, 50]$ and $b \in [-59.7, -57.9]$

4. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-8 + 4i)(3 + 10i)$$

A. $a \in [12, 22]$ and $b \in [92, 98]$

B. $a \in [-26, -22]$ and $b \in [37, 44]$

C. $a \in [-66, -58]$ and $b \in [65, 73]$

D. $a \in [12, 22]$ and $b \in [-98, -89]$

E. $a \in [-66, -58]$ and $b \in [-74, -67]$

5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{2730}{15}} + \sqrt{110}i$$

A. Not a Complex Number

B. Rational

C. Pure Imaginary

D. Irrational

E. Nonreal Complex

6. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{15}} + \sqrt{6}i$$

A. Irrational

B. Pure Imaginary

C. Not a Complex Number

D. Rational

E. Nonreal Complex

---

7. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{9216}{36}}$$

A. Whole

B. Rational

C. Irrational

D. Integer

E. Not a Real number

---

8. Simplify the expression below and choose the interval the simplification is contained within.

$$12 - 16^2 + 8 \div 4 * 9 \div 6$$

A. $[268.9, 274.3]$

B. $[-243.4, -239.4]$

C. $[265.8, 270.5]$

D. $[-248.1, -243.2]$

E. None of the above

---

9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 - 44i}{-3 - 7i}$$

A. $a \in [-7, -5]$ and $b \in [0.5, 1.5]$

B. $a \in [280.5, 282]$ and $b \in [2.5, 4.5]$

C. $a \in [-4.5, -2]$ and $b \in [4.5, 7.5]$

D. $a \in [4, 5.5]$ and $b \in [194.5, 195.5]$

E. $a \in [4, 5.5]$ and $b \in [2.5, 4.5]$

---

10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-9 - 55i}{2 - 7i}$$

A. $a \in [6, 8]$ and $b \in [-5, -2.5]$

B. $a \in [-5.5, -3.5]$ and $b \in [7.5, 8.5]$

C. $a \in [366.5, 367.5]$ and $b \in [-5, -2.5]$

D. $a \in [-9, -6.5]$ and $b \in [-2, 1]$

E. $a \in [6, 8]$ and $b \in [-174.5, -172.5]$

---

11. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{1456}{13}}$$

A. Rational

B. Irrational

C. Integer

D. Not a Real number

E. Whole

---

12. Simplify the expression below and choose the interval the simplification is contained within.

$$20 - 3^2 + 8 \div 5 * 10 \div 1$$

A. $[11.16, 17.16]$

B. $[44, 55]$

C. $[26, 29]$

D. $[28.16, 35.16]$

E. None of the above

---

13. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-9 - 5i)(-8 - 10i)$$

A. $a \in [114, 125]$ and $b \in [50, 53]$

B. $a \in [114, 125]$ and $b \in [-51, -49]$

C. $a \in [17, 23]$ and $b \in [-132, -126]$

D. $a \in [70, 74]$ and $b \in [50, 53]$

E. $a \in [17, 23]$ and $b \in [129, 132]$

---

14. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(4 + 7i)(-9 + 6i)$$

A. $a \in [-37, -30]$ and $b \in [39.9, 42.2]$

B. $a \in [4, 7]$ and $b \in [-89.3, -86.1]$

C. $a \in [-83, -74]$ and $b \in [-40.8, -38.1]$

D. $a \in [-83, -74]$ and $b \in [38.8, 41.8]$

E. $a \in [4, 7]$ and $b \in [86.5, 89.6]$

---

15. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{1040}{0}} + \sqrt{99}i$$

A. Irrational

B. Pure Imaginary

C. Nonreal Complex

D. Not a Complex Number

E. Rational

---

16. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{625}} + \sqrt{8}i$$

A. Not a Complex Number

B. Irrational

C. Nonreal Complex

D. Rational

E. Pure Imaginary

---

17. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{5}{0}}$$

A. Whole

B. Rational

C. Irrational

D. Integer

E. Not a Real number

18. Simplify the expression below and choose the interval the simplification is contained within.

$$4 - 6 \div 19 * 5 - (20 * 13)$$

A. $[-257.17, -255.04]$

B. $[-228.8, -228.39]$

C. $[263.26, 264.85]$

D. $[-258.68, -256.21]$

E. None of the above

19. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 + 55i}{-7 + 6i}$$

A. $a \in [3, 5]$ and $b \in [-6, -5]$

B. $a \in [3, 5]$ and $b \in [-440, -438]$

C. $a \in [-5, -3.5]$ and $b \in [-4, -3]$

D. $a \in [-2, 0.5]$ and $b \in [8, 10]$

E. $a \in [266.5, 269]$ and $b \in [-6, -5]$

20. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-36 - 22i}{5 + 6i}$$

A. $a \in [-312.5, -311.5]$ and $b \in [0, 2.5]$

B. $a \in [-5.5, -3.5]$ and $b \in [105, 106.5]$

C. $a \in [-5.5, -3.5]$ and $b \in [0, 2.5]$

D. $a \in [-8.5, -6.5]$ and $b \in [-5, -2.5]$

E. $a \in [-2.5, 0]$ and $b \in [-6, -4.5]$

---

21. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{52900}{100}}$$

A. Whole

B. Integer

C. Not a Real number

D. Irrational

E. Rational

---

22. Simplify the expression below and choose the interval the simplification is contained within.

$$13 - 3^2 + 2 \div 11 * 12 \div 19$$

A. $[4.09, 4.14]$

B. $[21.99, 22.07]$

C. $[22.11, 22.5]$

D. $[3.74, 4.09]$

E. None of the above

---

23. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-5 - 3i)(6 + 9i)$$

A. $a \in [-7, 0]$ and $b \in [-66, -61]$

B. $a \in [-62, -56]$ and $b \in [24, 33]$

C. $a \in [-62, -56]$ and $b \in [-27, -22]$

D. $a \in [-34, -25]$ and $b \in [-27, -22]$

E. $a \in [-7, 0]$ and $b \in [58, 68]$

---

24. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-5 - 8i)(-3 + 7i)$$

A. $a \in [-43, -35]$ and $b \in [-59, -58]$

B. $a \in [-43, -35]$ and $b \in [56, 61]$

C. $a \in [13, 17]$ and $b \in [-57, -49]$

D. $a \in [69, 72]$ and $b \in [7, 12]$

E. $a \in [69, 72]$ and $b \in [-12, -7]$

---

25. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\frac{9}{-7} + 25i^2$$

A. Not a Complex Number

B. Irrational

C. Pure Imaginary

D. Rational

E. Nonreal Complex

---

26. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{1936}{0}} + \sqrt{154}i$$

A. Not a Complex Number

B. Rational

C. Pure Imaginary

D. Nonreal Complex

E. Irrational

---

27. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{25}{0}}$$

A. Not a Real number

B. Rational

C. Integer

D. Whole

E. Irrational

---

28. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 16 \div 12 * 18 - (15 * 8)$$

A. $[-143, -138]$

B. $[-306, -303]$

C. $[117.93, 121.93]$

D. $[-122.07, -113.07]$

E. None of the above

---

29. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-27 + 44i}{1 + 6i}$$

A. $a \in [4, 7.5]$ and $b \in [5, 6]$

B. $a \in [236.5, 237.5]$ and $b \in [5, 6]$

C. $a \in [-8.5, -7]$ and $b \in [-4, -2]$

D. $a \in [4, 7.5]$ and $b \in [205, 207]$

E. $a \in [-27.5, -26.5]$ and $b \in [6, 8.5]$

---

30. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{54 + 77i}{-4 + 5i}$$

A. $a \in [-15, -14]$ and $b \in [-1.5, -0.5]$

B. $a \in [4, 4.5]$ and $b \in [-579, -577]$

C. $a \in [168.5, 169.5]$ and $b \in [-16, -14]$

D. $a \in [-14, -12.5]$ and $b \in [15, 16]$

E. $a \in [4, 4.5]$ and $b \in [-16, -14]$
